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ABSTRACT

The Iowa Department of Education collects fundamental information on Iowa public schools with respect to various aspects of technology, its implementation and usage. The Technology Survey for the 1997-98 school year was administered to all school districts (377 of 384 districts responded) to collect current baseline information on a central core of technology elements. The Department uses these trend data to describe the status of Iowa public school technology, to reflect needs, and to facilitate school improvement processes. In addition, data to respond to legislative and other requests about technology in Iowa public school districts are provided through this survey. Information is presented according to the following areas: computer hardware and technology, Internet uses and software, technology and instruction, automated and computerized records, and technology support and staff development. Where feasible the report compares information from the 1996-97 and 1997-98 school year technology surveys, as well as a 1995-96 school year technology survey cosponsored by the Iowa Department of Education and Iowa State University. The survey form is appended. (AEF)

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TECHNOLOGY REPORT

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TECHNOLOGY REPORT

A Report on

Technology

in Iowa Public School Districts

1997-98

Iowa Department of Education
March, 1999

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Introduction

The Iowa Department of Education collects fundamental information on Iowa public schools with respect to various aspects of technology, its implementation and usage. The Technology Survey for the 1997-98 school year was distributed to all school districts. The survey was conducted to provide current baseline information on a central core of technology elements in order provide trend data. Because technology is an ever-changing area, new elements are also a part of the survey. The Department uses these data to describe the status of Iowa public school technology, to reflect needs, and to facilitate school improvement processes. In addition, data to respond to legislative and other requests about technology in Iowa public school districts are provided through this survey.

This report includes the arrangement of information according to the following areas: computer hardware and technology, Internet uses and software, technology and instruction, automated and computerized records, technology support and staff development. This report and other technology information provided by individual school districts will be made available on the Department's web site.

Where feasible, this report presents and compares information from the 1996-97, 1997-98 school year technology surveys, as well as a 1995-96 school year technology survey cosponsored by the Iowa Department of Education and Iowa State University. It should be noted that 331 of the 384 public school districts responded to the 1995-96 survey, 100 percent for 1996-97 (379 school districts) and 1997-98 (377 school districts).

For inquiries regarding the survey and requests for data contact the Bureau of Planning, Research, and Evaluation (515-281-4730) or email (Steve.Boal@ed.state.ia.us).

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Computer Hardware and Technology

The computer hardware and technology section presents information regarding the availability of computers, location of in-school computers, the types of computers in use and other technology available to students. Other technology includes CD-ROMs, modems, laserdisc players, cable television and computer networks – wide area networks (WANs) and local area networks (LANs).

Availability of Computers

Tables 1, 2, and 3 compare the total number of computers available for student use as reported by public school districts, the certified enrollment and the number of pupils per computer in 1995-96, 1996-97 and 1997-98, respectively. The total number of computers available for student use in Iowa public schools in 1997-98 increased by 13.7 percent over the previous year. The impact this increase in computers has had on availability is shown in the ratios of students per computer. It should be noted that school districts were asked to count a wide variety of computers. For example, older "low end" computers which are capable of only very limited tasks, such as word processing, were included in the survey. These older computers often cannot run new educational software, nor can they access the Internet. The school districts also included counts of newer "high end" computers which have multiple capabilities such as accessing Internet. On a statewide basis, the total number of pupils per computer in 1995-96 was 7.2, compared to 5.9 in 1996-97, and 5.2 in 1997-98. Six of the seven enrollment categories mirrored reductions in the ratio of pupils per computer from 1996-1997 to 1997-98. Districts within enrollment categories of 400 students and above showed substantial decreases in this ratio over the same time period. All seven enrollment categories registered decreases in the ratio of pupils per computer, from 1995-96 to 1997-98.

Table 1

NUMBER OF COMPUTERS IN IOWA PUBLIC SCHOOL DISTRICTS BY ENROLLMENT CATEGORY — 1995-96

	Enrollment Category							
	<250	250-399	400-599	600-999	1,000-2,499	2,500-7,499	7,500+	State
Number of Districts Reporting[1]	22	43	74	91	72	22	7	331
Number of Computers	829	2,778	6,043	11,258	13,989	10,010	9,371	54,278
Certified Enrollment[2]	4,509	13,102	36,043	68,185	104,286	82,049	82,983	391,157
Pupils per Computer[3]	5.4	4.7	6.0	6.1	7.5	8.2	8.9	7.2

SOURCE: IOWA DEPARTMENT OF EDUCATION, BASIC EDUCATIONAL DATA SURVEY, TECHNOLOGY FILE, 1995-96.
NOTE: [1]BASED ON THE RESPONSES RECEIVED FROM 331 OF THE 384 IOWA PUBLIC SCHOOL DISTRICTS.
[2]SUM OF CERTIFIED ENROLLMENT FOR DISTRICTS REPORTING.
[3]CERTIFIED ENROLLMENT DIVIDED BY THE NUMBER OF COMPUTERS.

Table 2

NUMBER OF COMPUTERS IN IOWA PUBLIC SCHOOL DISTRICTS BY ENROLLMENT CATEGORY — 1996-97

	Enrollment Category							
	<250	250-399	400-599	600-999	1,000-2,499	2,500-7,499	7,500+	State
Number of Districts Reporting[1]	24	46	76	116	83	25	9	379
Number of Computers	1,155	3,813	7,904	18,206	21,910	16,910	17,054	86,239
Certified Enrollment[2]	4,818	15,324	37,699	88,577	126,738	99,346	133,004	505,523
Pupils Per Computer[3]	4.2	4.0	4.8	4.9	5.8	5.9	7.8	5.9

SOURCE: IOWA DEPARTMENT OF EDUCATION, BASIC EDUCATIONAL DATA SURVEY, TECHNOLOGY FILE, 1996-97.
NOTE: [1]FOR 1996-97 THE TOTAL NUMBER OF PUBLIC SCHOOL DISTRICTS EQUALS NUMBER OF REPORTING DISTRICTS.
[2]SUM OF CERTIFIED ENROLLMENT FOR DISTRICTS REPORTING.
[3]CERTIFIED ENROLLMENT DIVIDED BY THE NUMBER OF COMPUTERS.

Table 3

NUMBER OF COMPUTERS IN IOWA PUBLIC SCHOOL DISTRICTS BY ENROLLMENT CATEGORY — 1997-98

	Enrollment Category							
	<250	250-399	400-599	600-999	1,000-2,499	2,500-7,499	7,500+	State
Number of Districts Reporting[1]	23	51	71	112	86	25	9	377
Number of Computers[2]	1,078	4,565	8,809	18,632	25,292	18,783	20,870	98,029
Certified Enrollment	4,521	17,108	35,757	84,801	130,208	99,314	133,421	505,130
Pupils Per Computer	4.2	3.7	4.1	4.6	5.1	5.3	6.4	5.2

SOURCE: IOWA DEPARTMENT OF EDUCATION, BASIC EDUCATIONAL DATA SURVEY, TECHNOLOGY FILE, 1997-98.
NOTE: [1]FOR 1997-98 THE TOTAL NUMBER OF PUBLIC SCHOOL DISTRICTS EQUALS NUMBER OF REPORTING DISTRICTS.
[2]THE NUMBER OF COMPUTERS IN 1997-98 WAS ESTIMATED, BASED ON THE PREVIOUS YEAR FOR ONE SCHOOL DISTRICT.

A comparison of certified enrollment and total number of computers within the public schools in 1995-96, 1996-97, and 1997-98 is reported in Tables 4, 5, and 6. There has been some shifting in both enrollment and computer frequency distributions, as seen in the seven enrollment categories. In 1997-98 districts under 1,000 enrollment reported a higher percentage of computers than percentage of enrollment within the respective enrollment categories. Districts with enrollments of 1,000 or above represented 71.8 percent of the certified enrollment while accounting for only 66.$\overline{3}$ percent of all computers being used by students enrolled in Iowa public schools.

Table 4

PERCENT OF COMPUTERS VERSUS CERTIFIED ENROLLMENT IN IOWA PUBLIC SCHOOL DISTRICTS — 1995-96

	Enrollment Category							
	<250	250-399	400-599	600-999	1,000-2,499	2,500-7,499	7,500+	State
Number of Districts Reporting[1]	22	43	74	91	72	22	7	331
Percent of Certified Enrollment	1.2	3.3	9.2	17.4	26.7	21.0	21.2	100.0
Percent of Computers	1.5	5.1	11.1	20.7	25.8	18.5	17.3	100.0

SOURCE: IOWA DEPARTMENT OF EDUCATION, BASIC EDUCATIONAL DATA SURVEY, TECHNOLOGY FILE, 1995-96.
NOTE: [1]BASED ON THE RESPONSES RECEIVED FROM 331 OF THE 384 IOWA PUBLIC SCHOOL DISTRICTS.

Table 5

PERCENT OF COMPUTERS VERSUS CERTIFIED ENROLLMENT IN IOWA PUBLIC SCHOOL DISTRICTS — 1996-97

	Enrollment Category							
	<250	250-399	400-599	600-999	1,000-2,499	2,500-7,499	7,500+	State
Number of Districts Reporting[1]	24	46	76	116	83	25	9	379
Percent of Certified Enrollment	1.0	3.0	7.5	17.5	25.1	19.6	26.3	100.0
Percent of Computers	1.3	4.4	9.2	21.1	25.4	18.8	19.8	100.0

SOURCE: IOWA DEPARTMENT OF EDUCATION, BASIC EDUCATIONAL DATA SURVEY, TECHNOLOGY FILE, 1996-97.
NOTE: [1]FOR 1996-97 THE TOTAL NUMBER OF PUBLIC SCHOOL DISTRICTS EQUALS NUMBER OF REPORTING DISTRICTS.

Table 6

PERCENT OF COMPUTERS VERSUS CERTIFIED ENROLLMENT IN IOWA PUBLIC SCHOOL DISTRICTS — 1997-98

	Enrollment Category							
	<250	250-399	400-599	600-999	1,000-2,499	2,500-7,499	7,500+	State
Number of Districts Reporting[1]	23	51	71	112	86	25	9	377
Percent of Certified Enrollment	0.9	3.4	7.1	16.8	25.8	19.6	26.4	100.0
Percent of Computers	1.1	4.6	9.0	19.0	25.8	19.2	21.3	100.0

SOURCE: IOWA DEPARTMENT OF EDUCATION, BASIC EDUCATIONAL DATA SURVEY, TECHNOLOGY FILE, 1997-98.
NOTE: [1]FOR 1997-98 THE TOTAL NUMBER OF PUBLIC SCHOOL DISTRICTS EQUALS NUMBER OF REPORTING DISTRICTS.
THE NUMBER OF COMPUTERS IN 1997-98 WAS ESTIMATED BASED ON THE PREVIOUS YEAR FOR ONE SCHOOL DISTRICT.
ADJUSTMENT MADE FOR ROUNDING ERROR.

Location of In-School Computers

Districts were asked to indicate the percent of in-school computers used by students according to the location of their use: computer labs, classrooms, or media centers. The average percent of in-school computers used by students enrolled in Iowa public school districts according to location of use is displayed in Tables 7 and 8 (1996-97 and 1997-98). Overall, in 1996-97, an average of 48.2 percent of computers were located in computer labs, 42.8 percent in classrooms, and 9.0 percent in the school media center. Note, since these are reported averages they will not sum to 100 percent. By comparison, in 1997-98, the average percent of computer usage in computer labs, 49.8 percent; exceeded usage in classrooms (44.8 percent) by 5 percentage points; while the average percent used in the media center was 10.3 percent. In 1997-98, districts with enrollments under 250 students, on the average used 48.3 percent of their computers in computer labs, with an average of 42.5 percent used in classrooms. In general, as the enrollment category increased so did the average percent of computers used in classrooms, while the average percent used in computer labs decreased except for the largest enrollment category. The media center also experienced a higher average percent of computers (15.7 percent), for districts with student enrollments of 2,500 to 7,499 than in all other enrollment categories. It is important to emphasize that a full range of computers ("low end" to "high end") were reported in the survey. The survey did not ask districts where various types of computers were located within the school.

Table 7

AVERAGE PERCENT OF IN-SCHOOL COMPUTERS IN IOWA PUBLIC SCHOOLS BY LOCATION[1,2] — 1996-97

Enrollment Category	Number of Districts	Responding Districts	Location		
			Computer Labs	Classrooms	Media Center
<250	24	19	54.1%	38.3%	7.6%
250-399	46	40	47.9	43.8	8.3
400-599	76	66	51.8	40.1	8.1
600-999	116	102	49.8	41.2	9.0
1,000-2,499	83	72	45.1	45.4	9.5
2,500-7,499	25	23	38.6	49.3	12.2
7,500+	9	7	40.0	47.6	12.4
State	379	329	48.2	42.8	9.0

SOURCE: IOWA DEPARTMENT OF EDUCATION, BASIC EDUCATIONAL DATA SURVEY, TECHNOLOGY FILE, 1996-97.
NOTE: [1]INCLUDES ONLY THOSE DISTRICTS WHERE THE SUM OF PERCENTAGES ALLOCATED TO ALL LOCATIONS WAS EQUAL TO 100 PERCENT.
[2]REPRESENTS THE AVERAGE PERCENT OF COMPUTERS BY LOCATION.
THE PERCENTS BY LOCATION DO NOT SUM TO 100 PERCENT BECAUSE THEY ARE BASED ON AVERAGES.

Table 8

AVERAGE PERCENT OF IN-SCHOOL COMPUTERS IN IOWA PUBLIC SCHOOLS BY LOCATION[1] — 1997-98

Enrollment Category	Number of Districts	Responding Districts	Location		
			Computer Labs	Classrooms	Media Center
<250	23	21	48.3%	42.5%	9.1%
250-399	51	49	46.3	43.6	10.1
400-599	71	71	46.1	44.3	9.5
600-999	112	108	44.9	44.2	10.8
1,000-2,499	86	84	44.7	45.9	9.5
2,500-7,499	25	23	34.6	49.7	15.7
7,500+	9	8	44.0	45.1	10.9
State	377	364	49.8	44.8	10.3

SOURCE: IOWA DEPARTMENT OF EDUCATION, BASIC EDUCATIONAL DATA SURVEY, TECHNOLOGY FILE, 1997-98.
NOTE: THE PERCENTS BY LOCATION DO NOT SUM TO 100 PERCENT BECAUSE THEY ARE BASED ON AVERAGES.

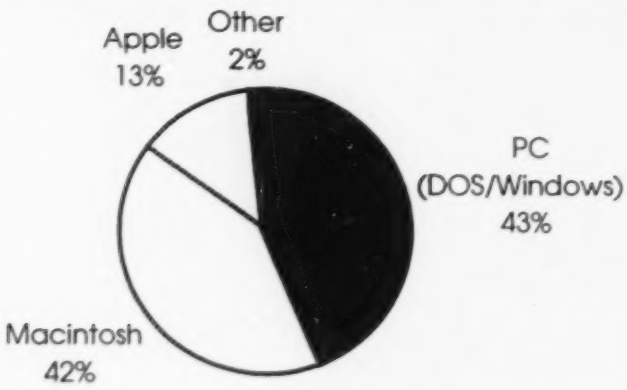
Type of Computers in Use

Figure 1 presents information for the U.S. on the percent of computers installed in public school districts in 1995-96. PC, including Windows and DOS, represented about 43 percent of the installed base. Macintosh of all types made up 42 percent of the computers used in the nation's school districts, while Apple comprised 13 percent and other types represented two percent.

Figures 2 and 3 present similar information on the number, percent and types of computers being used by Iowa public school students in 1996-97 and 1997-98. In 1996-97, Macintosh and Power Macintosh represented 44,387 or 51.5 percent of the 86,239 computers reported. Apple represented 25.0 percent of the total computers, followed by the PC accounting for 23.5 percent of all computers. In 1997-98 Macintosh and Power Macintosh made up 56.5 percent of the 98,029 computers used by students in Iowa public schools. PC represented 26.2 percent of the total, followed by Apple with 17.3 percent of the installed user base. This survey counted older "low end" computers as well as the newer "high end" computers. For example, the Apple II series of computers are no longer manufactured and do not have the capabilities to run many of the newer educational software programs. Likewise the PC DOS/Windows computers range from the older 286 models which are not capable of running new educational software to the newer Pentium models. The MAC/Power Mac computers also represent a wide range of computing ability from the older early Macintosh computers to the more recent Power Mac.

Figure 1

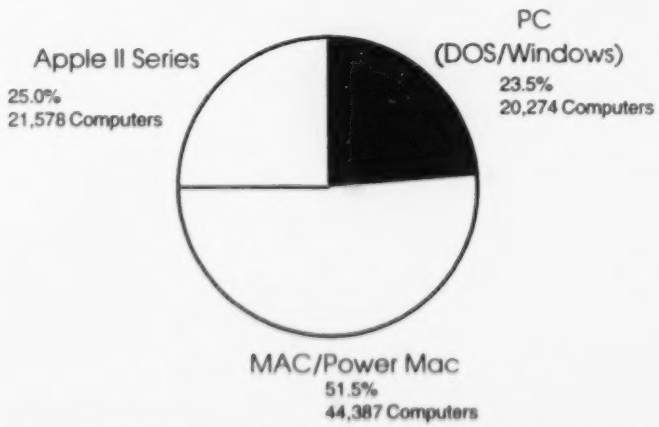
PERCENT OF INSTALLED COMPUTERS BY PLATFORM FOR THE NATION — 1995-96



SOURCE: QUALITY EDUCATION DATA, EDUCATIONAL TECHNOLOGY TRENDS, 10TH EDITION, 1997.

Figure 2

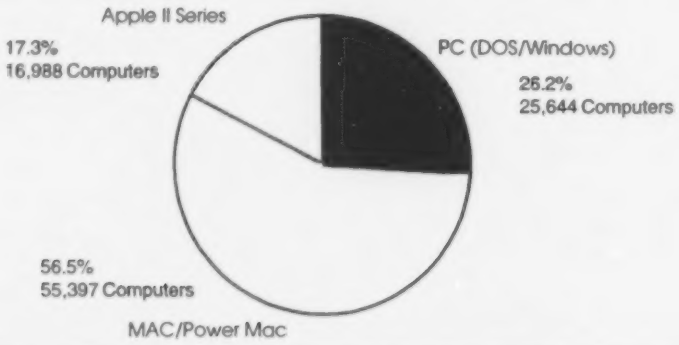
NUMBER AND PERCENT OF COMPUTERS USED IN IOWA PUBLIC SCHOOL DISTRICTS BY TYPE OF COMPUTER — 1996-97



SOURCE: IOWA DEPARTMENT OF EDUCATION, BASIC EDUCATIONAL DATA SURVEY, TECHNOLOGY FILE, 1996-97.

Figure 3

NUMBER AND PERCENT OF COMPUTERS USED IN IOWA PUBLIC SCHOOL DISTRICTS BY TYPE OF COMPUTER — 1997-98



SOURCE: IOWA DEPARTMENT OF EDUCATION, BASIC EDUCATIONAL DATA SURVEY, TECHNOLOGY FILE, 1997-98.

CD ROMs, Modems, and Laserdiscs

The number of Iowa school districts who used CD ROMs, modems, and laserdisc players in 1997-98 is shown in Table 9. The survey asked school districts to indicate types of technology used, such as CD ROMs, modems, and laserdisc players. No attempt was made to count the number of CD ROM players, modems or laserdisc players being utilized in the district. Statewide use of CD ROMs was reported by 99.2 percent of Iowa public school districts in 1997-98. Modem usage was reported by 70.8 percent of Iowa public school districts. Laserdisc players were utilized by nearly three out of four (73.7 percent) Iowa public school districts.

Table 9

NUMBER OF IOWA PUBLIC SCHOOL DISTRICTS USING CD-ROMS, MODEMS, AND LASERDISC PLAYERS — 1997-98

	Enrollment Category							
	<250	250-399	400-599	600-999	1,000-2,499	2,500-7,499	7,500+	State
Number of Districts Reporting[1]	23	51	71	112	86	25	9	377
TECHNOLOGY								
CD-ROM								
Number	23	49	70	112	86	25	9	374
Percent	100.0	96.1	98.6	100.0	100.0	100.0	100.0	99.2
MODEMS								
Number	22	29	41	84	65	18	8	267
Percent	95.7	56.9	57.7	75.0	75.6	72.0	88.9	70.8
LASERDISC PLAYER								
Number	14	34	45	83	74	19	9	278
Percent	60.9	66.7	63.4	74.1	86.0	76.0	100.0	73.7

SOURCE: IOWA DEPARTMENT OF EDUCATION, BASIC EDUCATIONAL DATA SURVEY, TECHNOLOGY FILE, 1997-98.
NOTE: [1]FOR 1997-98 THE TOTAL NUMBER OF PUBLIC SCHOOL DISTRICTS EQUALS NUMBER OF REPORTING DISTRICTS.

Cable Television

There were a total of 320, or nearly 85 percent, of Iowa's public school districts using cable television to educate students in 1997-98. This represented an increase of 2.4 percentage points from that reported in 1995-96. There has been some shifting in terms of increases and decreases in the distribution of districts reporting cable usage by enrollment category. For example, all of the districts in the largest enrollment category reported an increase to 100 percent of districts using cable television from 1995-96 to 1996-97 and 1997-98. There was a decline of one district in enrollment category 1,000-2,499 students and 2,500-7,499 students reporting cable television use from 1996-97 to 1997-98. The range in percent of districts with cable use was 78.4 percent for those districts with enrollments from 250-399, to 100 percent for districts with 7,500 or more students (Table 10).

Table 10

NUMBER AND PERCENT OF IOWA PUBLIC SCHOOL DISTRICTS USING CABLE TELEVISION IN 1995-96, 1996-97, AND 1997-98

Enrollment Category	Number of Districts Reporting			Number of Districts with Cable TV			Percent of Districts with Cable TV		
	95-96[1]	96-97[2]	97-98[2]	95-96	96-97	97-98	95-96	96-97	97-98
<250	22	24	23	18	18	19	81.8	75.0	82.6
250-399	43	46	51	37	37	40	86.0	80.4	78.4
400-599	74	76	71	51	56	57	68.9	73.7	80.3
600-999	91	116	112	75	91	92	82.4	78.4	82.1
1,000 - 2,499	72	83	86	65	80	79	90.3	96.4	91.9
2,500-7,499	22	25	25	20	25	24	90.9	100.0	96.0
7,500+	7	9	9	7	9	9	100.0	100.0	100.0
State	331	379	377	273	316	320	82.5	83.4	84.9

SOURCE: IOWA DEPARTMENT OF EDUCATION, BASIC EDUCATIONAL DATA SURVEY, TECHNOLOGY FILES, 1995-96, 1996-97 AND 1997-98.

NOTE: [1]BASED ON THE RESPONSES RECEIVED FROM 331 OF THE 384 IOWA PUBLIC SCHOOL DISTRICTS.
[2]FOR 1996-97 AND 1997-98 THE TOTAL NUMBER OF PUBLIC SCHOOL DISTRICTS EQUALS NUMBER OF REPORTING DISTRICTS.

Local Area Networks (LANs) and Wide Area Networks (WANs)

Statewide, 91.5 percent or 345 of the 377 Iowa public school districts in 1997-1998 reported using local area networks (LANs). This percent has increased from 68.3 percent in 1995-96, to 82.3 percent in 1996-97. Wide area networks (WANs) use reported by Iowa public school districts, similarly has increased, from 18.7 percent in 1995-96 to 53.3 percent in 1997-98 (Tables 11, 12, 13). It is not known how extensive any local area networks or wide area networks are in the school districts. For example, only one section of one school building in a district may have a local area network. In other cases, school buildings have local area networks to all the classrooms. It should also be noted that wide area networks are more likely to be found in districts with multiple school buildings since a single K-12 building would likely need only a local area network.

Table 11

NUMBER AND PERCENT OF IOWA PUBLIC SCHOOL DISTRICTS USING LOCAL AREA AND WIDE AREA NETWORKS — 1995-96

	Enrollment Category							
	<250	250-399	400-599	600-999	1,000-2,499	2,500-7,499	7,500+	State
Number of Districts Reporting[1]	22	43	74	91	72	22	7	331
LOCAL AREA NETWORK								
Number	8	24	46	60	61	21	6	226
Percent	36.4	55.8	62.2	65.9	84.7	95.5	85.7	68.3
WIDE AREA NETWORK								
Number	0	7	6	17	18	9	5	62
Percent	0	16.3	8.1	18.7	25.0	40.9	71.4	18.7

SOURCE: IOWA DEPARTMENT OF EDUCATION, BASIC EDUCATIONAL DATA SURVEY, TECHNOLOGY FILE, 1995-96.
NOTE: [1]BASED ON THE RESPONSES RECEIVED FROM 331 OF THE 384 IOWA PUBLIC SCHOOL DISTRICTS.

Table 12

NUMBER AND PERCENT OF IOWA PUBLIC SCHOOL DISTRICTS USING LOCAL AREA AND WIDE AREA NETWORKS — 1996-97

	Enrollment Category							
	<250	250-399	400-599	600-999	1,000-2,499	2,500-7,499	7,500+	State
Number of Districts Reporting[1]	24	46	76	116	83	25	9	379
LOCAL AREA NETWORK								
Number	12	34	57	96	79	25	9	312
Percent	50.0	73.9	75.0	82.6	95.2	100.0	100.0	82.3
WIDE AREA NETWORK								
Number	2	12	21	47	46	15	9	152
Percent	8.3	26.1	27.6	40.5	55.4	60.0	100.0	40.1

SOURCE: IOWA DEPARTMENT OF EDUCATION, BASIC EDUCATIONAL DATA SURVEY, TECHNOLOGY FILE, 1996-97.
NOTE: [1]FOR 1996-97 THE TOTAL NUMBER OF PUBLIC SCHOOL DISTRICTS EQUALS NUMBER OF REPORTING DISTRICTS.

Table 13

NUMBER AND PERCENT OF IOWA PUBLIC SCHOOL DISTRICTS USING LOCAL AREA AND WIDE AREA NETWORKS — 1997-98

	Enrollment Category							
	<250	250-399	400-599	600-999	1,000-2,499	2,500-7,499	7,500+	State
Number of Districts Reporting[1]	23	51	71	112	86	25	9	377
LOCAL AREA NETWORK								
Number	17	44	66	104	82	23	9	345
Percent	73.9	86.7	93.0	92.9	92.0	100.0	100.0	91.5
WIDE AREA NETWORK								
Number	4	18	33	58	61	18	9	201
Percent	17.4	35.3	46.5	51.8	70.9	72.0	100.0	53.3

SOURCE: IOWA DEPARTMENT OF EDUCATION, BASIC EDUCATIONAL DATA SURVEY, TECHNOLOGY FILE, 1997-98.
NOTE: [1]FOR 1997-98 THE TOTAL NUMBER OF PUBLIC SCHOOL DISTRICTS EQUALS NUMBER OF REPORTING DISTRICTS.

Internet Uses and Software

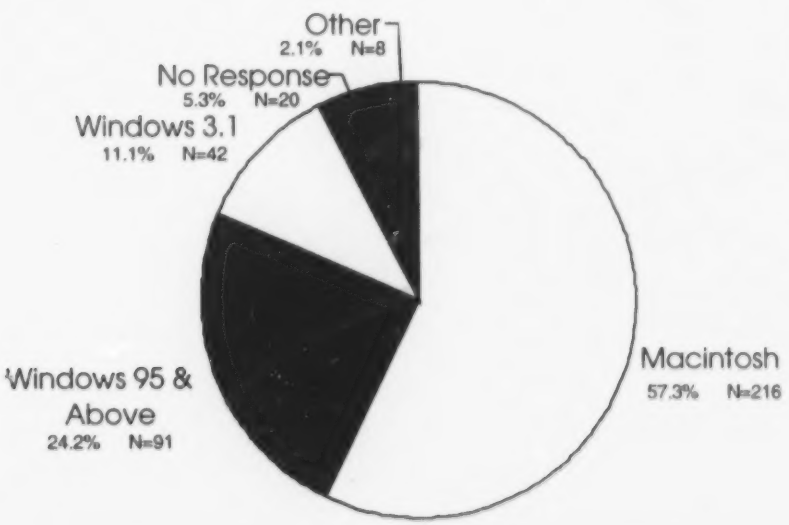
The Internet uses and software section summarizes the major findings on operating systems used to support access to Internet, student access to the Internet, Internet applications available to students, web browser use by students and the business office, Iowa public school district home page development, and predominant Internet connectivity used by Iowa school districts.

Operating Systems to Support Internet Access

Figure 4 displays the portion represented by each predominant operating system type supporting Internet access statewide. A comparison of the number and percent of Iowa public school districts by predominant operating systems during 1996-97 and 1997-98 is presented in Table 14. There were 357 or 94.7 percent of the districts reporting the type of operating system used to support Internet access in 1997-98. The proportion of districts using a Windows operating system has increased from 21.4 percent in 1996-97, to 35.3 percent in 1997-98. Windows 3.1 and Windows 95 and above have been recipients of an increase. This increase corresponds with the decrease in the use of Macintosh as the predominant operating system. Other operating systems including DOS, represented 2.1 percent of the predominant systems used by Iowa public districts in 1997-98.

Figure 4

PREDOMINANT OPERATING SYSTEMS SUPPORTING INTERNET ACCESS IN IOWA PUBLIC SCHOOL DISTRICTS — 1997-98



SOURCE: IOWA DEPARTMENT OF EDUCATION, BASIC EDUCATIONAL DATA SURVEY, TECHNOLOGY FILE, 1997-98.

Table 14

PREDOMINANT OPERATING SYSTEMS SUPPORTING INTERNET ACCESS BY NUMBER AND PERCENT OF IOWA PUBLIC SCHOOL DISTRICTS — 1996-97 AND 1997-98

Type of Predominant Operating System	1996-97 Number of Districts	1996-97 Percent of Districts	1997-98 Number of Districts	1997-98 Percent of Districts
Windows 3.1	26	6.9%	42	11.1%
Windows 95 and above	55	14.5	91	24.2
Windows Subtotal	81	21.4	133	35.3
Macintosh	258	68.1	216	57.3
Other Operating Systems	5	1.3	8	2.1
No Response	35	9.2	20	5.3
State[1]	379	100.0	377	100.0

SOURCE: IOWA DEPARTMENT OF EDUCATION, BASIC EDUCATIONAL DATA SURVEY, TECHNOLOGY FILES, 1996-97 AND 1997-98.
NOTE: [1]FOR 1996-97 AND 1997-98 THE TOTAL NUMBER OF PUBLIC SCHOOL DISTRICTS EQUALS NUMBER OF REPORTING DISTRICTS.

Access to the Internet

Depicted in Table 15 are the number and percent of Iowa public school districts who provided students regular in-school access to the Internet in 1995-96, 1996-97, and 1997-98. The 1995-96 survey question related to this item, referred generically to "Internet access" rather than to "regular in-school Internet access by students" languages used in subsequent surveys. The survey asked districts to report "regular in-school Internet access by students." The extent to which individual Iowa classrooms can access the Internet is not known. For example, in some school districts the only access to the Internet is in the school library/ media center. Other school districts provide Internet access in the classrooms. It is also not known how many of the Internet connections in individual schools are "fast" direct connections which allow several computers simultaneous Internet access versus the number of "slower" dial-up connections which permit only one computer to use a connection at a time. The number of districts providing regular in-school access by students to the Internet has increased from 91.3 percent in 1996-97, to 96.3 percent in 1997-98. In 1995-96 there were less than three of four districts providing regular in-school Internet access. In general, in 1997-98 the percent of districts providing Internet access increased from smaller to larger enrollment category, ranging from 91.3 percent to 100.0. The exception to this relationship was in the largest enrollment category.

Table 15

NUMBER AND PERCENT OF IOWA PUBLIC SCHOOL DISTRICTS WITH ACCESS TO THE INTERNET 1995-96, 1996-97, AND 1997-98

Enrollment Category	Number of Districts Reporting			Number of Districts with Internet Access			Percent of Districts with Internet Access		
	95-96[1]	96-97[2]	97-98[2]	95-96[1]	96-97[2]	97-98[2]	95-96[1]	96-97[2]	97-98[2]
<250	22	24	23	11	20	21	50.0%	83.3%	91.3%
250-399	43	46	51	29	42	48	67.4	91.3	94.1
400-599	74	76	71	47	64	69	63.5	84.2	97.2
600-999	91	116	112	71	107	108	78.0	92.2	96.4
1,000 - 2,499	72	83	86	54	81	84	75.0	97.6	97.7
2,500-7,499	22	25	25	21	24	25	95.5	96.0	100.0
7,500+	7	9	9	6	8	8	85.7	88.9	88.9
State	331	379	377	239	*346	363	72.2	91.3	96.3

SOURCE: IOWA DEPARTMENT OF EDUCATION, BASIC EDUCATIONAL DATA SURVEY, TECHNOLOGY FILES, 1995-96, 1996-97 AND 1997-98.

NOTE: [1]BASED ON THE RESPONSES RECEIVED FROM 331 OF THE 384 IOWA PUBLIC SCHOOL DISTRICTS.
[2]FOR 1996-97 AND 1997-98 THE TOTAL NUMBER OF PUBLIC SCHOOL DISTRICTS EQUALS NUMBER OF REPORTING DISTRICTS.
*THE TOTAL NUMBER OF SCHOOL DISTRICTS REPORTING REGULAR IN-SCHOOL STUDENT INTERNET ACCESS HAS BEEN CORRECTED DUE TO CHANGE IN RESPONSE AFTER THE RELEASE OF THE 1996-97 DATA.

Internet Applications

Tables 16 and 17 reflect the number and percent of Iowa public school districts providing student Internet applications according to educational setting and grade level (elementary or secondary) in 1996-97 and 1997-98. The applications included for which districts responded were email, file transfer protocol (FTP), listserve, news groups, and the world wide web (WWW).

The survey asked school districts to report by instructional setting the Internet applications to which students have regular in-school access. The survey did not ask districts to report how many individual classrooms within the school district provide this type of access. Some school districts provide such access for students in only one or two locations while other districts have multiple classrooms and settings with such access.

While students were reported by some districts to have access to each application, in each setting and grade level, more districts reported student access at the secondary grade level than at the elementary grade level in 1996-1997 and in 1997-1998. A comparison of student access data for the time periods, 1996-1997 and 1997-1998, reveals that the number and percent of districts providing access has increased. In 1997-98,

the library/media center continued to be the setting where districts most often provided students with Internet access. The range in the percent of all districts providing library/media center access was 17.8 percent for Listserve access at the elementary level (29.4 percent at the secondary level), to 85.9 percent for WWW access at the secondary level (65.8 percent of districts provided access for elementary students).

The Internet application to which students had most frequent access was WWW, in the three settings and at both grade levels. Listserve student access was provided by the fewest number of districts in any of the three settings. With the rapid growth of worldwide web use, the need for older Internet applications such as FTP would be expected to decrease.

Table 16

NUMBER AND PERCENT OF IOWA PUBLIC SCHOOL DISTRICTS BY INTERNET SOFTWARE APPLICATION, SETTING, AND GRADE LEVEL 1996-97

Internet Application	Type of Setting					
	Computer Lab		Classroom		Library/Media Center	
	N	%	N	%	N	%
Email						
Elementary (K-6)	59	15.6%	73	19.3%	107	28.2%
Secondary (7-12)	152	40.1	121	31.9	177	46.7
FTP						
Elementary	42	11.1	57	15.0	80	21.1
Secondary	130	34.3	102	26.9	159	42.0
Listserve						
Elementary	26	6.9	36	9.5	55	14.5
Secondary	88	23.2	69	18.2	103	27.2
News Groups						
Elementary	26	6.9	36	9.5	58	15.3
Secondary	83	21.9	68	17.9	100	26.4
World Wide Web						
Elementary	108	28.5	129	34.0	195	51.5
Secondary	233	61.5	184	48.5	282	74.4

SOURCE: IOWA DEPARTMENT OF EDUCATION, BASIC EDUCATIONAL DATA SURVEY, TECHNOLOGY FILE, 1996-97.
NOTE: FOR 1996-97 THE TOTAL NUMBER OF PUBLIC SCHOOL DISTRICTS EQUALS NUMBER OF REPORTING DISTRICTS.

Table 17

NUMBER AND PERCENT OF IOWA PUBLIC SCHOOL DISTRICTS BY INTERNET SOFTWARE APPLICATION, SETTING, AND GRADE LEVEL 1997-98

Internet Application	Type of Setting: Computer Lab N	Computer Lab %	Classroom N	Classroom %	Library/Media Center N	Library/Media Center %
Email						
Elementary (K-6)	98	26.0%	119	31.6%	127	33.7%
Secondary (7-12)	207	54.9	171	45.4	217	57.6
FTP						
Elementary	65	17.2	86	22.8	91	24.1
Secondary	162	42.9	139	36.9	171	45.4
Listserve						
Elementary	39	10.3	57	15.1	67	17.8
Secondary	93	24.7	85	22.5	111	29.4
News Groups						
Elementary	47	12.5	58	15.4	72	19.1
Secondary	108	28.6	97	25.7	125	33.2
World Wide Web						
Elementary	194	51.5	204	54.1	248	65.8
Secondary	296	78.5	258	68.4	324	85.9

SOURCE: IOWA DEPARTMENT OF EDUCATION, BASIC EDUCATIONAL DATA SURVEY, TECHNOLOGY FILE, 1997-98.
NOTE: FOR 1997-98 THE TOTAL NUMBER OF PUBLIC SCHOOL DISTRICTS EQUALS NUMBER OF REPORTING DISTRICTS.

Web Browsers

The predominant web browsers in use by students of Iowa public school districts in 1996-97 and 1997-98 are shown in Table 18. There were 360 districts who reported student web browser use in 1997-98 compared with 338 districts in 1996-97. Use of Netscape as the predominant browser declined from nearly 94 percent in 1996-97, to 76.4 percent of the reporting districts in 1997-98. Conversely, student use of Microsoft Internet Explorer increased from 4.1 percent of responding districts in 1996-97, to 20.8 percent in 1997-98. Other browser use remained fairly constant, changing from 2.1 to 2.8 percent over the two reporting years.

Table 18

PREDOMINANT WEB BROWSER USED BY STUDENTS IN IOWA PUBLIC SCHOOL DISTRICTS — 1996-97 AND 1997-98

Predominant Student Used Web Browsers	1996-97 Number of Districts	1996-97 Percent of Districts	1997-98 Number of Districts	1997-98 Percent of Districts
Netscape	317	93.8	275	76.4
Microsoft Internet Explorer	14	4.1	75	20.8
Other	7	2.1	10	2.8
State[1]	338	100.0	360	100.0

SOURCE: IOWA DEPARTMENT OF EDUCATION, BASIC EDUCATIONAL DATA SURVEY, TECHNOLOGY FILES, 1996-97 AND 1997-98.
NOTES: [1]TOTAL BASED ON DISTRICTS WITH WORLD WIDE WEB STUDENT ACCESS.

The predominant web browser for business office use was most often reported as Netscape, as indicated by 215 or 57.0 percent of the 377 Iowa public school districts. In comparison, Microsoft Internet Explorer was the predominant business office browser in 82 or 21.8 percent of the districts. "Other" which included no response, was recorded for more than one in five districts (Table 19).

Table 19

NUMBER AND PERCENT OF IOWA PUBLIC SCHOOL DISTRICTS BY PREDOMINANT WEB BROWSER IN BUSINESS OFFICE USE — 1997-98

Predominant Business Office Used Web Browsers	Number	Percent
Netscape	215	57.0
Microsoft Internet Explorer	82	21.8
Other[1]	80	21.2
State[2]	377	100.0

SOURCE: IOWA DEPARTMENT OF EDUCATION, BASIC EDUCATIONAL DATA SURVEY, TECHNOLOGY FILE, 1997-98.
NOTE: [1]OTHER INCLUDES OTHER BROWSERS AND NO RESPONSE.
[2]SURVEYS WERE RETURNED BY ALL 377 PUBLIC SCHOOL DISTRICTS.

World Wide Web Home Pages

Iowa public school districts' presence on the world wide web (WWW) was reported by districts in the 1996-97 and 1997-98 technology surveys. The results are summarized according to web site developer in Tables 20 and 21. The percent of Iowa districts who reported having a home page on the WWW increased from 47.8 percent in 1996-97, to 58.4 percent in 1997-98. In 1996-97 the percent of districts having a web presence ranged from 20.8 percent for districts with enrollments under 250 students, to 72.0 percent for districts with enrollments of 2,500-7,499 students. In 1997-98 the range was 39.1 percent for districts with enrollments under 250 students, to 84.0 percent for districts with enrollments of 2,500-7,499 students. The smallest enrollment category increased the most over the time period of 1996-97 to 1997-98.

Table 20

NUMBER OF IOWA PUBLIC SCHOOL DISTRICTS WITH HOME PAGES BY WEB SITE DEVELOPER — 1996-97

	Enrollment Category								
	<250	250-399	400-599	600-999	1,000-2,499	2,500-7,499	7,500+	Total	
Total Districts	24	46	76	116	83	25	9	379	
Web Site Developer	Number of School Districts Reporting								Percent*
Staff Only	2	0	6	11	9	3	1	32	17.7%
Students Only	0	3	5	7	5	3	0	23	12.7
Combination of Staff and Students	2	14	19	34	27	12	4	112	61.9
Third Party Developers	1	1	0	7	5	0	0	14	7.7
Total Districts with Home Pages	5	18	30	59	46	18	5	181	100.0
Percent with Home Pages	**20.8**	**39.1**	**39.5**	**50.9**	**55.4**	**72.0**	**55.6**	**47.8**	

SOURCE: IOWA DEPARTMENT OF EDUCATION, BASIC EDUCATIONAL DATA SURVEY, TECHNOLOGY FILE, 1996-97.
NOTE: *PERCENT DISTRICTS IN EACH GROUP OUT OF TOTAL DISTRICTS WITH HOME PAGES.

In 1997-98 nearly 50 percent of the districts with web pages utilized a combination of staff and students as developers compared to 61.9 percent in 1996-97. Web site development by students increased from 12.7 percent in 1996-97 to 32.3 percent in 1997-98. Staff developed web sites decreased slightly while districts relying on third party developers declined from 7.7 percent to 1.4 percent.

Table 21

NUMBER OF IOWA PUBLIC SCHOOL DISTRICTS WITH HOME PAGES BY WEB SITE DEVELOPER — 1997-98

	Enrollment Category								
	<250	250-399	400-599	600-999	1,000-2,499	2,500-7,499	7,500+	Total	
Total Districts	23	51	71	112	86	25	9	377	
Web Site Developer	Number of School Districts Reporting								Percent
Staff Only	4	1	7	7	9	7	2	37	16.8%
Students Only	1	6	16	21	20	6	1	71	32.3
Combination of Staff and Students	2	14	19	33	31	7	3	109	49.5
Third Party Developers	2	0	0	0	0	1	0	3	1.4
Total Districts with Home Pages	9	21	42	61	60	21	6	220	100.0
Percent with Home Pages	**39.1**	**41.2**	**59.2**	**54.5**	**69.8**	**84.0**	**66.7**	**58.4**	

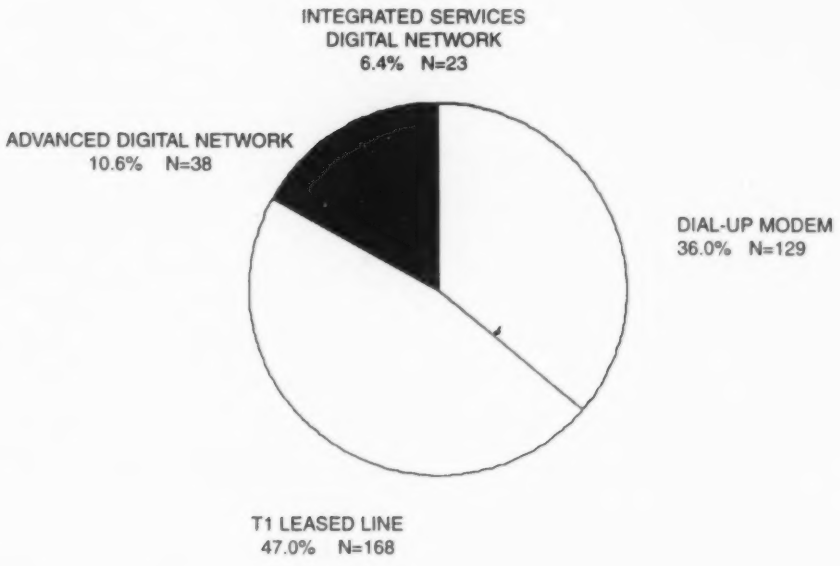
SOURCE: IOWA DEPARTMENT OF EDUCATION, BASIC EDUCATIONAL DATA SURVEY, TECHNOLOGY FILE, 1997-98.

Internet Connectivity

Figure 5 represents the percent of Iowa public school districts according to type of predominant connectivity employed for Internet access. The survey asked school districts to indicate the predominant type of Internet connectivity. It did not ask districts about the variety of connectivity within a single school district. For example, one district may have only one dial-up modem in the elementary school (allowing only one computer to use the Internet at a time) while the high school building may have a leased line connection which permits several computers throughout the school to simultaneously access the Internet. There were 358 school districts that specified their predominant method of connectivity in 1997-98: dial-up modem, leased line, Advanced Digital Network (ADN), and Integrated Services Digital Network (ISDN). T1 leased line access was most often utilized for connectivity, 47.0 percent of the reporting school districts. Dial-up modem was the technology employed for this purpose in 36.0 percent of the responding school districts. These most frequent modes of connectivity were followed by ADN, 10.6 percent; and ISDN, 6.4 percent).

Figure 5

PERCENT OF IOWA PUBLIC SCHOOL DISTRICTS BY TYPE OF PREDOMINANT INTERNET CONNECTIVITY — 1997-98



SOURCE: IOWA DEPARTMENT OF EDUCATION, BASIC EDUCATIONAL DATA SURVEY, TECHNOLOGY FILE, 1997-98.

Table 22 details Internet connectivity by enrollment category. Districts within the largest enrollment category reported using leased line access for connectivity (44.5 percent), followed by dial-up modem (33.3 percent) while districts within the smallest enrollment category reported using a dial-up modem (63.6 percent) as their predominant Internet connectivity.

Table 22

NUMBER AND PERCENT OF IOWA PUBLIC SCHOOL DISTRICTS BY PREDOMINANT TYPE OF INTERNET CONNECTIVITY — 1997-98

	Enrollment Category															
	<250		250-399		400-599		600-999		1,000-2,499		2,500-7,499		7,500+		Total	
Type of Connectivity	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Dial-Up (Modem)	14	63.6%	14	31.1%	24	35.8%	33	30.8%	30	36.1%	11	44.0%	3	33.3%	129	36.0%
T1 Leased Line	6	27.3	21	46.7	31	46.3	55	51.4	39	47.0	12	48.0	4	44.5	168	47.0
Advanced Digital Network	0	0.0	8	17.8	8	11.9	9	8.4	10	12.1	1	4.0	2	22.2	38	10.6
Integrated Services Digital Network	2	9.1	2	4.4	4	6.0	10	9.4	4	4.8	1	4.0	0	0.0	23	6.4
Reporting Districts	**22**		**45**		**67**		**107**		**83**		**25**		**9**		**358**	
Total Districts	**23**		**51**		**71**		**112**		**86**		**25**		**9**		**377**	

SOURCE: IOWA DEPARTMENT OF EDUCATION, BASIC EDUCATIONAL DATA SURVEY, TECHNOLOGY FILE, 1997-98.
NOTE: PERCENTS ADJUSTED FOR ROUNDING ERROR.

Technology and Instruction

The integration of technology by Iowa school districts section, reviews Internet use as a part of instruction and technology use by instructional area.

Integration of Technology

Tables 23 and 24 compare the estimated percent of district students who used Internet as a part of instructional programs in 1996-97 and 1997-98. At the elementary (K-6) level in 1997-98, 102 of districts estimated student Internet use as a part of instruction by less than ten percent of the district students. This was a decrease from 229 districts in 1996-97. Similarly, at the secondary level (7-12) in 1997-98, 33 districts estimated Internet was used by less than ten percent of the district students compared with 125 districts the previous year. There were 103 districts that reported in 1997-98 that 50 percent or more of the elementary students received instruction over the Internet. There were 254 districts that reported the same percent of student usage for secondary level students in 1997-98. These reported results were increases from that reported in 1996-97.

Table 23

NUMBER OF IOWA PUBLIC SCHOOL DISTRICTS BY ESTIMATED PERCENT OF STUDENTS WHO USE INTERNET AS A PART OF INSTRUCTIONAL PROGRAMS — 1996-97

	Percent of Student Internet Use				
Level	<10%	10-24%	25-49%	50-79%	80+%
	Number of Responding Districts				
Elementary (K-6)	229	65	38	33	13
Secondary (7-12)	125	47	67	74	65

SOURCE: IOWA DEPARTMENT OF EDUCATION, BASIC EDUCATIONAL DATA SURVEY, TECHNOLOGY FILE, 1996-97.
NOTE: ESTIMATED BY PUBLIC SCHOOL DISTRICTS.

Table 24

NUMBER OF IOWA PUBLIC SCHOOL DISTRICTS BY ESTIMATED PERCENT OF STUDENTS WHO USE INTERNET AS A PART OF INSTRUCTIONAL PROGRAMS — 1997-98

	Percent of Student Internet Use				
Level	<10%	10-24%	25-49%	50-79%	80+%
	Number of Responding Districts				
Elementary (K-6)	102	101	58	68	35
Secondary (7-12)	33	29	55	109	145

SOURCE: IOWA DEPARTMENT OF EDUCATION, BASIC EDUCATIONAL DATA SURVEY, TECHNOLOGY FILE, 1997-98.
NOTE: ESTIMATED BY PUBLIC SCHOOL DISTRICTS.

TECHNOLOGY REPORT

The percent of time students used technology in business, biological and physical science, computer education, fine arts, industrial arts, language arts, mathematics, physiology and health, school-to-work, and social science, is displayed in Table 25. In the area of computer education more than 85 percent of the reporting districts (315) reported that 80 percent or more of the instruction involved the use of technology. In business, nearly 70 percent of the districts indicated that use of technology accounted for at least half of the instruction. The foreign language area represented the least used instructional area for technology, with almost 82 percent of the districts incorporating technology into less than 25 percent of the instruction time.

Table 25

PERCENT OF TIME IOWA PUBLIC SCHOOL STUDENTS USE TECHNOLOGY[1] IN VARIOUS INSTRUCTIONAL AREAS — 1997-98

Instructional Area	Percent of Time Students Use Technology					Total Responding Districts
	<10%	10-24%	25-49%	50-79%	80+%	
	Number of Districts Responding[1]					
Business	27	38	44	87	164	360
Biological & Physical Science	64	135	108	49	8	364
Computer Education	7	14	11	22	315	369
Fine Arts	120	139	73	27	7	366
Foreign Language	169	130	52	10	4	365
Industrial Arts	56	77	92	101	38	364
Language Arts	41	103	124	83	20	371
Library Reference	22	35	69	125	117	368
Mathematics	94	147	79	38	12	370
Physiology and Health	185	116	47	17	1	366
School-to-Work	119	104	64	55	15	357
Social Science	93	150	82	32	10	367
Other	112	29	22	10	5	178

SOURCE: IOWA DEPARTMENT OF EDUCATION, BASIC EDUCATIONAL DATA SURVEY, TECHNOLOGY FILE, 1997-98.
NOTE: [1]EXCLUDES DISTRICTS THAT CHECKED MORE THAN ONE PERCENTAGE INTERVAL PER INSTRUCTIONAL AREA.

Automated Computerized Records

The automated computerized record component has been expanded from providing information about automated student records and the uses made of automated student records to include data about staff records and uses, financial records, facilities records and curriculum records within Iowa public school districts.

Automated Student Records

There were 329 or 87.3 percent of the 377 Iowa public school districts who reported having automated student record systems (ASRS) in 1997-98 (Table 26). This percent is an increase from that reported for 1995-95, 66.7 percent of districts and 1996-97, 73.6 percent. The number and percent of districts with K-12 ASRS has more than doubled from 1995-96, 103 districts (26.8 percent) to 1997-98, 215 districts (57.0 percent). In general, the occurrence of automated student records increased with successive increases in enrollment categories.

Table 26

NUMBER AND PERCENT OF IOWA PUBLIC SCHOOL DISTRICTS USING AUTOMATED STUDENT RECORD SYSTEMS (ASRS) 1995-96, 1996-97 AND 1997-98

Enrollment Category	Number of Districts with ASRS			Percent of Districts with ASRS			Number of Districts with K-12 ASRS			Percent of Districts with K-12 ASRS		
	95-96	96-97	97-98	95-96[1]	96-97[2]	97-98[3]	95-96	96-97	97-98	95-96[1]	96-97[2]	97-98[3]
<250	7	6	10	26.9	25.0	43.5	2	2	4	7.7	8.3	17.4
250-399	29	30	42	58.0	65.2	82.4	11	21	23	22.0	42.1	45.1
400-599	57	57	63	70.4	75.0	88.7	20	32	36	24.7	42.1	50.7
600-999	73	86	104	67.6	74.1	92.9	35	53	67	32.4	45.7	59.8
1,000 - 2,499	62	70	76	72.9	84.3	88.4	22	40	56	25.9	48.2	65.1
2,500-7,499	21	22	25	84.0	88.0	100.0	7	20	21	28.0	80.0	84.0
7,500+	7	8	9	77.8	88.9	100.0	6	7	8	66.7	77.8	88.9
State	256	279	329	66.7	73.6	87.3	103	175	215	26.8	46.2	57.0

SOURCE: IOWA DEPARTMENT OF EDUCATION, BASIC EDUCATIONAL DATA SURVEY, TECHNOLOGY FILES, 1995-96, 1996-97, AND 1997-98.
NOTE: [1]BASED UPON 384 IOWA DISTRICTS.
[2]BASED UPON 379 IOWA DISTRICTS.
[3]BASED UPON 377 IOWA DISTRICTS.

Table 27 conveys the uses districts made of the automated student records in 1997-98. The most prevailing uses reported were student attendance, 84.4 percent; record courses taken by students, 81.4 percent; and student demographics, 63.7 percent.

Table 27

USES OF AUTOMATED STUDENT RECORD SYSTEMS IN IOWA PUBLIC SCHOOL DISTRICTS — 1997-98

Student Uses	Number of Districts	Percent of Students with Computerized Records
Cumulative Folder	166	44.0
Courses Taken/Credits Earned	307	81.4
Dropouts	199	52.8
Health Records	121	32.1
Scheduling	302	80.1
Student Attendance	318	84.4
Student Demographics	240	63.7
Other	35	9.3
Total Districts[1]	377	NA

SOURCE: IOWA DEPARTMENT OF EDUCATION, BASIC EDUCATIONAL DATA SURVEY, TECHNOLOGY FILE, 1997-98.
NOTE: [1]FOR 1997-98 THE TOTAL NUMBER OF PUBLIC SCHOOL DISTRICTS EQUALS NUMBER OF REPORTING DISTRICTS.

During the 1995-96 school year, the Iowa Department of Education initiated an Electronic Data Interchange (EDI) effort with six pilot school districts and three state Regents institutions. The EDI endeavor is known as Project EASIER (Electronic Access System for Iowa Educational Records). Project EASIER has as its primary goal, the development and implementation of a system for the collection of essential student information for state and federal reporting requirements, utilizing portions of individual student records.

In addition, Project EASIER supports the transfer of student records from one district to another and the transmission of electronic student transcripts from Iowa high schools to post secondary institutions. A prerequisite to participation is the presence of an automated student information system at the local school district level.

Table 28 reflects the number and percent of school districts participating in the EDI effort. The number of districts participating in the electronic transfer of student records using EDI has increased from six districts in 1995-96, to 101 districts in 1998-99. This represents nearly 27 percent of Iowa's 375 public school districts.

Table 28

PARTICIPATION OF IOWA PUBLIC SCHOOL DISTRICTS IN ELECTRONIC DATA INTERCHANGE (EDI) 1995-96 TO 1998-99

	1995-96	1996-97	1997-98	1998-99
Number of Districts	6	34	42	101*
Percent of Districts	1.6	9.0	11.1	26.9

SOURCE: IOWA DEPARTMENT OF EDUCATION, BUREAU OF PLANNING, RESEARCH AND EVALUATION, EDI RECORDS.
NOTE: *PARTICIPATING IOWA SCHOOL DISTRICTS AS OF SEPTEMBER 1, 1998. PARTICIPATION IN ELECTRONIC DATA INTERCHANGE EFFORTS INVOLVES A NUMBER OF READINESS STAGES AND NOT ALL DISTRICTS HAVE TRANSMITTED STUDENT RECORDS ELECTRONICALLY.

Other Computerized Records

In addition to having automated student record systems (ASRS); the number and percent of Iowa public school districts having other types of computerized records were as follows: staff computerized records, 238 or 63.1 percent; financial system records, 281 or 74.5 percent; facilities computerized records, 150 or 39.8 percent; and curriculum computerized records, 146 or 38.7 percent, were reported by districts for 1997-98 (Table 29). Generally, the incidence of staff, facilities and curriculum computerized records increased with successive increases in enrollment categories. Financial system records were the exception to this generalization with a range of 68.0 percent for districts with 2,500 to 7,499 students, to 88.9 percent for districts with student enrollments of 7,500 or more.

Table 30 depicts the content included within staff computerized records by school districts reported in 1997-98. Based upon the percent of districts by content, the most prevalent staff record content areas were: salary, 49.9 percent; contract type, 47.5 percent; position title, 46.7 percent; and staff demographics, 45.4 percent.

Table 29

NUMBER AND PERCENT OF IOWA PUBLIC SCHOOL DISTRICTS BY TYPE OF AUTOMATED COMPUTERIZED RECORDS — 1997-98

Enrollment Category	Total Districts	Districts with Student Records		Districts with Staff Records		Districts with Financial System Records		Districts with Facilities Records		Districts with Curriculum Records	
		No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent
<250	23	10	43.5%	8	34.8%	18	78.3%	5	21.8%	5	21.7%
250-399	51	42	82.4	23	45.1	39	76.5	12	23.5	16	31.4
400-599	71	63	88.7	42	59.2	50	70.4	27	38.0	26	36.6
600-999	112	104	92.9	72	64.3	90	80.4	43	38.4	49	43.8
1,000 - 2,499	86	76	88.4	62	72.1	59	68.6	41	47.7	38	44.2
2,500-7,499	25	25	100.0	22	88.0	17	68.0	17	68.0	11	44.0
7,500+	9	9	100.0	9	100.0	8	88.9	5	55.6	3	33.3
State	377	329	87.3	238	63.1	281	74.5	150	39.8	146	38.7

SOURCE: IOWA DEPARTMENT OF EDUCATION, BASIC EDUCATIONAL DATA SURVEY, TECHNOLOGY FILE, 1997-98.

Table 30

CONTENT UTILIZED BY IOWA PUBLIC SCHOOL DISTRICTS WITHIN STAFF COMPUTERIZED RECORDS — 1997-98

Content Area	Number of Districts	Percent of Districts
Staff Demographics	171	45.4%
Contract Type	179	47.5
Contract Days	168	44.6
Position Title	176	46.7
Salary	188	49.9
Course Assignments	119	31.6
Grades Served	110	29.2
Total Experience	110	29.2
District Experience	128	34.0
Undergraduate Majors	58	15.4
Graduate Majors	55	14.6
Total Districts Reporting[1]	377	NA

SOURCE: IOWA DEPARTMENT OF EDUCATION, BASIC EDUCATIONAL DATA SURVEY, TECHNOLOGY FILE, 1997-98.
NOTE: [1]FOR 1997-98 THE TOTAL NUMBER OF PUBLIC SCHOOL DISTRICTS EQUALS NUMBER OF REPORTING DISTRICTS.

Technology Support and Staff Development

The technology support and staff development portion identifies the average number of full-time equivalent technology support staff who are assigned to assist teachers within Iowa public school districts. This section also identifies the distribution of staff development services provided by public school districts during the 1997-98 school year.

Technology Support

The average number of statewide full-time equivalent (FTE) technology staff available to coordinate and support technology within Iowa public school districts was 1.0 FTE (Table 31). The average FTE technology staff increased with successive increases in enrollment category from 0.4 FTE for districts with less than 250 students, to 3.4 FTE for districts with 7,500 or more students.

Statewide, there was an average of 70.5 teachers per technology FTE support staff. Similarly, the number of teacher FTE supported per technology staff FTE for Iowa public school districts increased with successive increases in enrollment category. The smallest enrollment category supported 20.5 teachers per each technology staff FTE while the largest enrollment category supported 225.7 teacher FTE per technology FTE.

Table 31

NUMBER OF IOWA PUBLIC SCHOOL FULL-TIME EQUIVALENT TEACHERS SERVED PER FTE TECHNOLOGY SUPPORT STAFF — 1997-98

Enrollment Category	Average Technology FTE's	Teachers Per FTE Technology Support Staff
<250	0.4	20.5
250-399	0.5	37.2
400-599	0.8	35.7
600-999	1.0	41.0
1,000-2,499	1.1	74.8
2,500-7,499	2.2	89.1
7,500+	3.4	225.7
State	1.0	70.5

SOURCE: IOWA DEPARTMENT OF EDUCATION, BASIC EDUCATIONAL DATA SURVEY, TECHNOLOGY FILE, 1997-98.

Areas of Technology Staff Development

Technology staff development areas provided by Iowa public school districts during 1997-98 are displayed in Table 32. Overall, the most prevalent staff development areas included classroom technology application, general Internet, and general computer use. These two staff development areas tended to rate the highest across enrollment categories. For the smallest districts these top two areas and techniques for using the world wide web rated the highest. In the largest school districts nearly half of the staff development areas queried were unanimously utilized.

Table 32

PERCENT OF IOWA PUBLIC SCHOOL DISTRICTS PROVIDING TECHNOLOGY RELATED STAFF DEVELOPMENT — 1997-98

	Enrollment Category							
	<250	250-399	400-599	600-999	1,000-2,499	2,500-7,499	7,500+	State
Area of Staff Development								
Administrative Uses	60.9%	52.9%	69.0%	77.7%	84.9%	100.0%	100.0%	75.3%
Classroom Tech. Application	65.2	78.4	94.4	88.4	89.5	96.0	100.0	87.8
General Computer Use	69.6	70.6	76.1	79.5	81.4	100.0	100.0	79.3
General Internet	69.6	74.5	84.5	87.5	91.9	96.0	100.0	85.9
ICN Classroom	34.8	52.9	32.4	48.2	34.9	64.0	66.7	43.5
Multimedia	56.5	43.1	49.3	64.3	57.0	72.0	88.9	57.6
Networks	17.4	33.3	19.7	39.3	32.6	40.0	66.7	32.6
Software/Hardware Instruction	65.2	49.0	52.1	52.7	68.6	72.0	100.0	58.9
Techniques for Using WWW	69.6	66.7	78.9	77.7	79.1	100.0	77.8	77.7
Technology Curriculum Integration	21.7	47.1	39.4	44.6	44.2	88.0	88.9	46.4
Video Conferencing	0.0	11.8	7.0	8.9	5.8	12.0	22.2	8.2
Other	0.0	7.8	2.8	3.6	9.3	8.0	0.0	5.3
Number of Districts Reporting[1]	23	51	71	112	86	25	9	377

SOURCE: IOWA DEPARTMENT OF EDUCATION, BASIC EDUCATIONAL DATA SURVEY, TECHNOLOGY FILE, 1997-98.
NOTE: [1]FOR 1997-98 THE TOTAL NUMBER OF PUBLIC SCHOOL DISTRICTS EQUALS NUMBER OF REPORTING DISTRICTS.

Appendix...

Technology Survey, 1997-98

Due Date: July 1, 1998

State of Iowa
DEPARTMENT OF EDUCATION
Bureau of Planning, Research and Evaluation
Grimes State Office Building
Des Moines, Iowa 50319-0146

Technology Survey 1997-98

District No. _ _ _ _ Person Completing Form_____

District Name _____ Phone
Number_____

DIRECTIONS: Please provide district level data for survey questions as indicated.

A. Computer/Hardware Technology

1. Indicate, by type of computer and grade level, the number of in-school computers to which students have regular access.

Type of Computer	Total Number of Computers Elementary (PK-6)	Secondary (7-12)	Number Purchased in 1997-98
PC (DOS/Windows)	_____	_____	_____
Macintosh/Power Mac	_____	_____	_____
Apple (Apple II series)	_____	_____	

2. Indicate the percent of in-school computers by location. (*Use whole percents - percentages for item 2 should equal 100 percent*)

_____% Computer Lab _____% Classroom _____% Library/Media Center

3. Indicate which of the following technology hardware is utilized by the district. (*Check all that apply*)

___	Cable Television	___	Digital Camera	___	Scanner
___	CD ROM	___	ICN	___	Video Disc
___	Computer Network (LAN)	___	Modem		
___	Computer Network (WAN)	___	Satellite Dish		

B. Internet Uses and Software

4. Indicate the predominant operating system used to support Internet access for students. (*Check only one*)

___	DOS Only	___	Windows NT	___	Macintosh above 7.1
___	Windows 3.1	___	Windows 98 - Including Beta	___	Other (*Please specify below*)
___	Windows 95	___	Macintosh Ver. 7.1 or below		

_____

• For Assistance Contact: Steve Boal (515-281-4730).•

5. Check each of the applications of the Internet to which **ELEMENTARY STUDENTS** (*grades PK-6*) have regular in-school access by instructional setting. (*Check all that apply*)

	Instructional Setting		
	Computer Lab	Class-rooms	Library/ Media Center
____ No Access (If "*No Access*" proceed to item 6)			
E-mail	____	____	____
File Transfer Protocol (FTP)	____	____	____
Gopher Server	____	____	____
List Servers	____	____	____
News Groups	____	____	____
Word Wide Web	____	____	____

6. Check each of the applications of the Internet to which **SECONDARY STUDENTS** (*grades 7-12*) have regular in-school access by instructional setting. (*Check all that apply*)

____ No Access

	Instructional Setting		
	Computer Lab	Class-rooms	Library/ Media Center
E-mail	____	____	____
File Transfer Protocol (FTP)	____	____	____
Gopher Server	____	____	____
List Servers	____	____	____
News Groups	____	____	____
Word Wide Web	____	____	____

7. Indicate the **PRIMARY** Internet web browser used by students and business office. (*Check only one*)

Web Browser	Students	Business Office
Netscape Ver. 1 or 2	____	____
Netscape Ver. 3	____	____
Netscape Ver. 4	____	____
Microsoft Explorer Ver. 1 or 2	____	____
Microsoft Explorer Ver. 3	____	____
Microsoft Explorer Ver. 4	____	____
Mac Web	____	____
Mosaic	____	____
Other - (*Check and specify*)	____	____
	_____	

8. Indicate whether the district has a homepage on the World Wide Web.

____ Yes (*If yes, specify URL/address to the right*) http://_____

____ No (*If no skip to question 10*)

9. If the district has a homepage indicate the **PRIMARY** developer(s). (*Check only one*)

___ Staff Only___ Combination of Staff and Students

___ Students Only ___ Third Party Developer

10. Indicate the **PREDOMINANT** type of Internet connectivity (bandwidth). (*Check only one*)

Dial Up-Link		**Direct Link**
___ Modem	___	T1 (leased line 1,544 kilobytes per second)
	___	T3 (leased line 44,736 kilobytes per second)
	___	Advanced Digital Network (leased line 56 kilobytes per second)
	___	Integrated Services Digital Network

C. Instructional Integrated Technology

11. Estimate the percent of students by grade level who use the Internet as a part of their instructional program.

Elementary (PK-6)	**Secondary (7-12)**
____ %	____ %

12. Indicate the percent of time students use technology in each of the following instructional areas. (*Check only one category per instructional area*)

Instructional Area	**80% or More**	**50% to 79%**	**25% to 49%**	**10% to 24%**	**Less Than 10%**
Business	____	____	____	____	____
Biological and Physical Science	____	____	____	____	____
Computer Education	____	____	____	____	____
Fine Arts	____	____	____	____	____
Foreign Language	____	____	____	____	____
Industrial Arts	____	____	____	____	____
Language Arts	____	____	____	____	____
Library Reference	____	____	____	____	____
Mathematics	____	____	____	____	____
Physiology and Health	____	____	____	____	____
School-to-Work	____	____	____	____	____
Social Science	____	____	____	____	____
Other	____	____	____	____	____

13. Can students participate in classes from remote sites?

___ Yes (*Please complete item 14*) ___ No (*Skip to item 15*)

14. Indicate the technology used to connect students to remote sites. (*Check all that apply*)

____	Cable TV	____	Satellite
____	Interactive (two way) TV (ITV)	____	ICN

D. Automated/Computerized Records

15. Indicate the type of automated/computerized records the district currently has. (*Check all that apply*)

____	Students	____	Financial Information	____	Curriculum
____	Staff	____	Facilities		

16. The automated student records from all grade levels can be integrated into a district wide database.

____ Yes ____ No

17. Indicate the hardware platform(s) on which the automated record system resides for students, staff, finance, facilities and curriculum.

Enter **0** for Not Applicable
Enter **1** for Macintosh Operating System
Enter **2** for PC (DOS/Windows)
Enter **3** for Mainframe Computer
Enter **4** for Other (*Please specify below*)

____	Students	Other (*Description*)_____
____	Staff	Other (*Description*)_____
____	Financial Information	Other (*Description*)_____
____	Facilities	Other (*Description*)_____
____	Curriculum	Other (*Description*)_____

18. Indicate the software/vendor utilized for elementary and secondary automated **STUDENT** records by appropriate grade level. (*Check all that apply*)

Software Used	Elementary (PK-6)	Secondary (7-12)	Software Used	Elementary (PK-6)	Secondary (7-12)
Bush Software	_____	_____	School Master	_____	_____
CIMS	_____	_____	School System	_____	_____
ESSIS/ECI	_____	_____	SCT Education Systems	_____	_____
ForePoint	_____	_____	SIMS	_____	_____
Schoolware	_____	_____	Supply Tech	_____	_____
High Touch	_____	_____	The Tremont System	_____	_____
JMC	_____	_____	Win School	_____	_____
Mac School	_____	_____			
SASI		_____	_____	Other (*Please specify*	
below)	_____	_____			

Elementary

_____

Secondary

_____

19. Check the purpose(s) for which the automated student record system is used and the grade level(s) included. (*Check all that apply)*

Purpose	Elementary (PK-6)	Secondary (7-12)	Purpose	Elementary (PK-6)	Secondary (7-12)
Cumulative Folder	_____	_____	Student Attendance	_____	_____
Courses Taken/Credits Earned	_____	_____	Student Demographics	_____	_____
Dropouts	_____	_____	(e.g. race, gender, LEP)		
Health Records	_____	_____	Other *(Please specify below*	_____	_____
Scheduling	_____	_____	Elementary		
			_____		
			Secondary		
			_____		

20. If the district maintains automated **STAFF** records check the content that is included.

____	Staff Demographics	____	Course Assignments
	(e.g. Date of Birth, Race, Gender)	____	Grades Served
____	Contract Type (Full-time/Part-time)	____	Total Experience
____	Contract Days	____	District Experience
____	Position Title	____	Undergraduate Majors
____	Salary	____	Graduate Majors

E. Staff Development

21. Indicate the number of full-time equivalent (FTE) staff designated to coordinate and support technology within the district.

_____._____ FTE (*round to nearest tenth*) _____ No FTE designated

22. Did district staff participated in staff development opportunities related to the use of technology during the 1997-98 school year?

____ Yes ____ No

23. Check from the categories below all areas for which staff development was provided within the past year? (*Check all that apply)*

____	Administrative Uses	____	Networks
	(e.g., grading, scheduling, word processing)	____	Hardware/Other Software Instruction
____	Classroom Technology Applications	____	Techniques for Using the WWW
____	General Computer Use	____	Technology Curriculum Integration
____	General Internet	____	Video Conferencing
____	ICN Classroom	____	Other (*Please specify below*)
____	Multimedia		

_____